

U.S.S.N.: 10/743,892

Filed: December 22, 2003

RESPONSE TO RESTRICTION REQUIREMENT

Remarks

Response to Restriction Requirement

In the Office Action mailed March 23, 2005, the claims were divided into three groups:

Group I, claims 15 and 18, drawn to a method of promoting wound healing;

Group II, claims 21, 22, 29-31, and 34, drawn to a method of promoting cell migration or cellular chemotaxis; and

Group III, claim 26, drawn to a method of inhibiting formation of atherosclerotic plaques.

The Examiner has stated that the Applicant must elect a specific, fully defined peptide if Groups I or III are chosen for initial examination. The Examiner has also stated that if Group II is chosen, the Applicant must elect the following: a) a specific fully defined peptide; b) (i) a method of promoting cell migration to a target site *in vivo*, (ii) a method of inducing cellular chemotaxis *in vitro*, or (iii) a method of inducing cellular chemotaxis *in vivo*, and c) in the event that (b)(i) is elected, election of a cell type, along with a specific target site; in the event that (b)(ii) is elected, election of a cell type, and in the event that (b)(iii) is elected, election of a cell type.

Applicants elect Group I, with traverse, and elect SEQ ID NO: 1 for initial prosecution.

The Restriction Requirement is Improper.

To be valid, a restriction requirement must establish both that (1) the "inventions" are either independent or distinct, and (2) that examination of more than one of the "inventions" would constitute a burden to the Examiner. The term "independent" (i.e., not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect. MPEP § 806.04.

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Groups I and II should be considered together, because a search of the claims of each of these groups would involve consideration of similar elements, and therefore, would not constitute a burden to the Examiner. For example, both Groups I and II require the feature of using a therapeutically effective amount of an osteopontin derived chemotactic peptide to either promote wound healing or cell migration/chemotaxis. As stated in the abstracts of Firtel RA and Chung CY. *Bioessays* 22:603-615 (2000) and Moulin, V. *Eur. J. Cell Biol.* 68(1): 1-7 (1995) (copies of abstracts enclosed), and in the specification on page 20, lines 3-5, cell migration and chemotaxis are integral in the process of wound healing. The specification states, "Peptides of the invention can also be used in methods for promoting cell migration. A preferred application of this method is promotion of wound healing in a subject capable of being wounded or a subject with persistent, slow-healing wounds." Therefore, a search of the claims directed to promoting wound healing by administering an osteopontin derived chemotactic peptide (Group I) would necessarily involve a search for the promotion of cell migration and chemotaxis (Group II), and would not burden the Examiner.

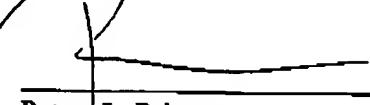
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Favorable consideration of claims 15, 18, 21-22, 26, 29-31 and 34 is respectfully solicited.

Respectfully submitted,


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Dated: April 25, 2005

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1: Eur J Cell Biol. 1995 Sep;68(1):1-7.

Related Articles, Links

Growth factors in skin wound healing.

Moulin V.

Laboratoire de Recherche des Grands Brûlés, Hôpital Saint-Sacrement,
Québec/Canada.

The healing of skin involves a wide range of cellular, molecular, physiological and biochemical events. During the healing process, cells migrate to wound sites where they proliferate and synthesize extracellular matrix components in order to reconstitute a tissue closely similar to the original one. This activity is regulated by mediators secreted from the wound border cells such as PDGF, EGF, TGF beta and many other cytokines. Their effects on cells has been demonstrated in vivo and in vitro. The aim of this article is to summarize the sequential events that occur during wound healing notably cell migration, proliferation and phenotypic differentiation and to describe the cellular interactions involving growth factors at the molecular level.

Publication Types:

- Review
- Review, Tutorial

PMID: 8549585 [PubMed - indexed for MEDLINE]

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1: Bioessays. 2000 Jul;22(7):603-15.

[Related Articles](#), [Links](#)

Comment in:

- Bioessays. 2000 Nov;22(11):1048.



The molecular genetics of chemotaxis: sensing and responding to chemoattractant gradients.

Firtel RA, Chung CY.

Section of Cell and Developmental Biology, Division of Biology, Center for Molecular Genetics, University of California, San Diego, La Jolla 92093-0634, USA. rafirtel@ucsd.edu

Chemotaxis plays a central role in various biological processes, such as the movement of neutrophils and macrophage during wound healing and in the aggregation of Dictyostelium cells. During the past few years, new understanding of the mechanisms controlling chemotaxis has been obtained through molecular genetic and biochemical studies of Dictyostelium and other experimental systems. This review outlines our present understanding of the signaling pathways that allow a cell to sense and respond to a chemoattractant gradient. In response to chemoattractants, cells either become polarized in the direction of the chemoattractant source, which results in the formation of a leading edge, or they reorient their polarity in the direction of the chemoattractant gradient and move with a stronger persistence up the gradient. Models are presented here to explain such directional responses. They include a localized activation of pathways at the leading edge and an "inhibition" of these pathways along the lateral edges of the cell. One of the primary pathways that may be responsible for such localized responses is the activation of phosphatidyl inositol-3 kinase (PI3K). Evidence suggests that a localized formation of binding sites for PH (pleckstrin homology) domain-containing proteins produced by PI3K leads to the formation of "activation domains" at the leading edge, producing a localized response.

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